

Andrew A. Kline

Assistant Professor, Department of Paper Engineering, Chemical Engineering, and Imaging
Tenure-Track Appointment at Western Michigan University on August 6, 2001

Ph.D. in Chemical Engineering, Michigan Technological University (1993)
B.S. in Chemical Engineering, Michigan Technological University (1987)
Assoc. in Science, Grand Rapids Junior College (1985)

Other Related Experience

Postdoctoral Associate (June 2000 – July 2001), Department of Design and Environmental Analysis,
Cornell University
Senior Research Engineer I and Instructor (April 1994 – June 2000), Department of Chemical
Engineering, Michigan Technological University
Research Scientist (July 1993 – April 1994), Institute of Wood Research, Michigan Technological
University
Graduate Research Assistant (November 1988 – July 1993), Department of Chemical Engineering,
Michigan Technological University
Visiting Scientist (May 1991 – August 1991), 3M Company, St. Paul, MN
Technical Aide (June 1989 – September 1989), 3M Company, St. Paul, MN
Graduate Teaching Assistant (September 1989 – February 1990), Department of Chemistry and
Chemical Engineering, Michigan Technological University

Assessment Materials Website

B.M. Aller, A.A. Kline, E. Tsang, and A. Rasmusson, “Web-based Assessment Library (WeBAL),”
Western Michigan University, August 2004. <<http://www.wmich.edu/engineer/webal/webal.htm>>

Selected Recent Refereed Journal Publications – Engineering Education

B.M. Aller, A.A. Kline, E. Tsang, R. Aravamuthan, A. Rasmussen, and C. Phillips, “WeBAL: A Web-
based Assessment Library to Enhance Teaching and Learning in Engineering,” accepted by **IEEE
Transactions on Education**, June 2005, expected publication November 2005.

C. Crumbaugh, P. Vellom, E. Tsang, and A. Kline, “Western Michigan University’s Collaborative Effort to
Enhance K-16 STEM Teaching and Learning,” **International Network for Engineering Education and
Research (iNEER)**, Special Volume, March 2005, pp. 17-32.

Selected Recent Refereed Conference Proceedings and Conference Presentations

A.A. Kline, B.M. Aller, and E. Tsang, “WIP: Development, Implementation, and Evaluation of Materials
to Support STEM-related Activities in K-12 Classrooms,” **Proceedings of the Frontiers in Engineering
Conference**, paper 1566, Indianapolis, IN, October, 2005.

A.A. Kline, E. Tsang, and B.M. Aller, "Service-Learning Engineering Design Activities at Western Michigan University to Support K-12 STEM Education," **ASEE 2005 National Meeting**, paper 2005-1802, Portland, Oregon, June 12-15, 2005.

B.M. Aller, A.A. Kline, and E. Tsang, "Work in Progress: Improving the Senior Capstone Design Experience through Shared Perspectives and Best Practices," **Proceedings of the Frontiers in Engineering Conference**, Savannah, GA, October, 2004, pp. T2G13 – T2G-14.

A.A. Kline, E. Tsang, C. Crumbaugh, P. Vellom, and B. Cobern, "Work in Progress: Establishing an Engineering Design Center for Service-Learning at Western Michigan University," **Proceedings of the Frontiers in Engineering Conference**, Savannah, GA, October, 2004, pp. F3E-13 – F3E-14.

C. Crumbaugh, P. Vellom, A.A. Kline, and E. Tsang, "Integrating First-Year Engineering Design and Pre-Service Science Education: A Model for Engineering and Education Collaboration to Enhance K-16 STEM Education," **Proceedings of the Frontiers in Engineering Conference**, Savannah, GA, October, 2004, pp. S2E-14 – S2E-18.

E. Tsang and A.A. Kline, "Design of an Inexpensive Optics Demonstration/Experimentation Kit for Middle School," **Proceedings of the American Society of Engineering Education Annual Meeting**, Salt Lake City, UT, June 2004.

B.M. Aller, E. Tsang, A.A. Kline, C. Phillips, and R. Aravamuthan, "Review and Evaluation of an Online Assessment System to Enhance Engineering Teaching and Learning," **Proceedings of the Frontiers in Engineering Conference**, Boulder, CO, November 2003.

A.A. Kline, E. Tsang, B.M. Aller, J. Asamadu, J. Morgan, S. Beyerlein, and D. Davis, "Creating and Using a Performance Measure for the Engineering Design Process," **Proceedings of the American Society of Engineering Education Annual Meeting**, Nashville, TN, June 2003.

B.M. Aller, and A.A. Kline, "Addressing Those Pesky ABET EC2000 Criteria in Capstone Design: New Perspectives and Applications," **Proceedings of the Frontiers in Engineering Conference**, Boston, MA, November 2002.

A.A. Kline, and B.M. Aller, "Involving Industry in Capstone Design Courses: Enhancing Projects, Addressing ABET Issues, and Supporting Undergraduate Engineering Practice," **Proceedings of the American Society of Engineering Education Annual Meeting**, Montreal, Quebec, June 2002.

Other journal and conference publications and project reports on various topics are not included.

Ongoing Engineering Education Research Efforts

"Supplemental Funds for Research Experiences for Undergrads (REU): WMU Design Center for K-12 Mathematics and Science Learning," Investigator: A.A. Kline (Year 1 funded at \$15,095, June 1, 2004, expiring June 30, 2006).

"Supplemental Funds for Research Experiences for Undergrads (REU): WMU Design Center for K-12 Mathematics and Science Learning," Investigator: A.A. Kline (Year 2 funded at \$26,049, July 18, 2005, expiring June 30, 2006).

"WMU Design Center for K-12 Math & Science Learning," funded by NSF July 15, 2003 for \$106,985 through June 30, 2004, and renewed through July, 2006 for \$268,015. Investigators: A.A. Kline (lead), A. Correa, C. Crumbaugh, P. Vellom, and E. Tsang,

“Service-Learning Design Center for K-12 Math & Science,” funded by Corporation for National and Community Service (October 2003- 2006). Funded for first-year activities for \$75,447. Second year funds of \$75,446 received in June 2004. Third year funds of \$75,447 received July 2005. Investigators: A.A. Kline (lead) and E. Tsang.

Engineering Education Related Professional Activities

Development of course materials and worked to gain CEAS Curriculum Committee approval for ENGR 202, 303 and 404, “Service-Learning Engineering Design” sequence, Fall 2003 to present. Courses to be offered as special topic in Spring 2005 semester, with full implementation, Fall 2005.

Originator, Organizer, and Presenter, “STEM Workshop for K-12 and Pre-service Teachers,” held at WMU, June 2004 and October 2005.

Reviewer, articles for “Innovations 2006: World Innovations in Engineering Education and Research,” Special Volume of the International Network for Engineering Education and Research (iNEER), September 2005.

Member, College Research and Graduate Program Committee (September 2005 – present)

Faculty mentor, CEAS Learning Community (First-year experience), 2005-06 academic year

Reviewer, papers for October 2005 FIE meeting

Member, CEAS Capstone Design Faculty Group (September 2003 - present)

Session moderator, ASEE North Central Regional Meeting, Kalamazoo, MI, April 2004

Reviewer, papers for the ASEE Annual Meeting, June 2004, Engineering Research Methods Division (ERM)

Foundation Coalition “TAMU Assessment and Evaluation Workshop.” One-day workshop on October 25, 2002, hosted by WMU CEAS.

Research Associate, WMU Center of Excellence in Engineering Education (2002 – Present)

Reviewer, papers for the ASEE Annual Meeting, June 2002, Design and Engineering Education Division (DEED)

Pacific Crest “Teaching Institute.” Three-day workshop in May, 2002 focusing on process education techniques, hosted by WMU and Kalamazoo Valley Community College (KVCC).

Pacific Crest “Designing and Implementing Performance Measures in Classes, Courses, and Programs.” Three-day workshop in May, 2002, hosted by WMU.